ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

Nuclear Utility Services, Inc., Washington, D.C., is new organization set up specifically for handling on a consulting basis nuclear activities of electric utilities. F. H. Warren, of Pickard-Warren-Lowe Associates, atomic energy consultants, is chairman; J. E. Gray, who for the past six years has headed Duquesne Light Co.'s activities at the Shippingport nuclear power plant, is president; and W. F. Witzig, formerly with Westinghouse Electric's nuclear projects, is vice-president and technical director. The new firm will offer counsel on choice, purchase and use of nuclear fuels; advice on operation and maintenance of nuclear power plants; assistance on technical and managerial problems peculiar to the nuclear power industry; etc. (Other BUSINESS NEWS, p. 4 this LETTER.)

Bid of Rio Tinto Mining Co. of Canada, Ltd., has been accepted by trustee in bankruptcy under offers called by him for remaining uranium contract of Stanrock Uranium Mines. Acting for unsecured creditors of Stanrock, the trustee had received bids from Denison Mines and Rio Tinto. Meetings of unsecured creditors, bondholders and stockholders will be held in June for final approval of the offer. This would extend the operations of Rio Tinto's Rio Algom mine by the 6,238,835 pounds of uranium oxide which Stanrock's contract calls for delivery of to Eldorado Mining and Refining. Under the offer, Rio Tinto about June 30 will pay in full Stanrock's outstanding first mortgage bonds amounting to about $29 million plus accrued interest of $2,108,000. Creditors with claims of some $6 million will also be paid. Rio Tinto will also take over control of Stanrock, close the operations, maintain it, and on Dec. 31, 1963 will return the property debt-free, together with $1 million, to the shareholders. (Other RAW MATERIALS NEWS, p. 5 this LETTER.)

Stock interest in Atomium Corp., Waltham, Mass. nuclear instrument firm, has been acquired by Perkin-Elmer Corp., Norwalk, Conn., manufacturer of infrared and optical instruments. Under terms of an agreement signed by the companies, Perkin-Elmer will acquire all of Atomium's stock during the next five years. Instruments designed by Atomium will be developed and marketed by Perkin-Elmer. These are for use in radiation medicine and radioactivity analysis. (Other FINANCIAL NEWS, p. 2 this LETTER.)

Lawsuit for patent infringement brought in February, 1957, by Nuclear-Chicago Corp. and Paul B. Weisz against Tracerlab, Inc. has been settled. The suit had charged infringement of patents covering Geiger-Muller counting gases. It was terminated by a licensing agreement for future manufacture and use and payment for past damages. (Other PATENT NEWS, p. 4 this LETTER.)

Some 540 plate-type fuel elements will be supplied by General Electric Co.'s atomic power equipment department, San Jose, Calif., for the engineering test reactor at the national reactor testing station, Arco, Idaho, under an order recently received by the company. GE will also fill an order for 64 plate-type fuel elements for the Los Alamos Omega West reactor. (Other CONTRACT NEWS, p. 2 this LETTER.)

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ATOMIC ENERGY CONTRACT NEWS...

BIDS ASKED: Bids have been asked by the USAEC's New York Operations Office, 376 Hudson St., for making quantitative determinations in upper air samples for next fiscal year of strontium-90, cesium-137, cerium-144, polonium-210, lead-210, zirconium-95, strontium-89 and barium-140; bids are due by May 31, 1960. Also invited by this office are bids for quantitative determination of concentration of strontium-90 in human bone and milk samples during the same period; bids for this work are due June 1, 1960.

Bids have been asked for the USAEC for construction of buildings and facilities for a second test cell in the Project Rover area at the Nevada test site. Bids are returnable no later than June 7, 1960 to Las Vegas branch office of the Commission. Estimate of cost is between $1.4 million and $1.7 million.

PROPOSALS MADE: Proposals to operate a prototype 50,000 net electrical kw boiling water nuclear power plant of advanced design have been made to the USAEC by the City of Los Angeles Department of Water & Power, jointly with the City of Pasadena, Calif.; and by Western Farmers Electric Cooperative, Anadarko, Okla. There have also been submitted to the Commission four proposals from reactor manufacturers to furnish the reactor for the plant. These proposals are in response to a USAEC invitation issued December, 1959. (Another USAEC invitation, also issued in December, for the design, construction and operation of a prototype 50,000 net electrical kw organic-cooled reactor drew no proposals.)

Joint proposal of Nuclear Development Corp. of America, White Plains, N.Y., and General Motors Corp., to initiate development and do preliminary design of a compact nuclear power plant for military applications has been selected by the USAEC as a basis for contract negotiations. Objectives are an extremely mobile, lightweight, compact power plant having an electrical power rating of 2000 to 3000 kw, for Department of Defense usage. The NDA-GM work will run about a year when the results will be evaluated by the Commission, the reactor system selected, and method of contractor selection determined for the balance of the project.

CONTRACTS AWARDED: On low bid of $311,035 Hayes-Henry Construction Co., Idaho Falls, has received USAEC contract to construct support facilities for the mobile low power reactor facility No. 1 (ML-1). Award, by the Commission's Idaho Operations Office, is for work at the national reactor testing station, Arco, Idaho. The ML-1, a mobile military reactor unit, will be a prototype power plant capable of producing 400 electrical kw. The entire power plant is designed to be transportable in four "packages" -- reactor, control equipment, power conversion unit, and reactor auxiliary equipment.

Allis-Chalmers Manufacturing Co., Milwaukee, has received letter of intent from the Italian Committee for Nuclear Research to work on a five-year development program involving the feasibility and economics of nuclear reactor fuel using a combination of thorium and uranium. Allis-Chalmer's work will be done jointly with Bomprini Parodi Delfino Co. of Italy.

Babcock & Wilcox Co., New York, under contract with the Danish Atomic Energy Commission to supply the second core loading for the DR-2 research reactor at Riso, will make delivery of the core in June. The shipment will consist of 30 fuel elements and 10 control elements of 90% uranium enrichment. The fuel elements are of the pinned type, and of aluminum plate construction similar to those supplied by B&W for the USAEC's materials testing reactor at the national reactor testing station, Aroc, Idaho. (Two research reactors, DR-1 and DR-2, are presently in operation at Riso. A third, the DR-3, achieved criticality January 1960, and is expected to be brought up to full power of 15 mw late this Summer.)

Vitro Engineering Co., New York City, has been selected by New York State's Office of Atomic Development to survey that state to determine and make preliminary evaluation of one or more sites for the safe storage of radioactive waste products including those from a nuclear fuels reprocessing plant. Vitro Engineering, division of Vitro Corp. of America, was selected from five engineering concerns submitting proposals. The survey work will be done by Vitro on a lump sum basis with a report on the most desirable site due June 10, 1960. The scope of the job was set up by the Office of Atomic Development, working with Pickard-Warren-Lowe Associates, consulting engineers of Washington, D.C. The state hopes to attract a privately-sponsored nuclear fuels reprocessing plant, work now done exclusively by the USAEC at its installations primarily in Idaho, S. Carolina, Tennessee and Washington.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...

NEW PRODUCTS: New automatic counting system for beta emitting solid radioactive samples, Model C115, with background of 2 counts per minute, contrasts with normal background of 15-20 counts per minute in conventional systems of this type. Low background makes possible for the first time automatic analysis of samples with extremely low radioactive content. The system will handle up to 35 radioactive samples. It is expected to be of particular use in analyzing milk and other substances for trace quantities of strontium-90; and in analyzing samples containing carbon-14, phosphorous-32, sulfur-35 and other beta emitting isotopes.--Nuclear-Chicago Corp., Des Plaines, Ill.

New low cost utility scaler, model SC-90, specifically designed for educational purposes, can operate with either Geiger or scintillation detectors. With only four front panel switches, it offers extreme simplicity of operation. Scaling circuitry consists of five cold cathode decades which project through the front panel of the instrument for direct readout; total count capacity is 100,000 counts. .....New moderately priced ratemeter provides choice of nine scale ranges; lowest is 0 to 100 cpm, highest to one million cpm. Intermediate ranges are multiples of 3 and 10. Accuracy of the instrument with a strip chart recorder is said to be better than plus-or-minus 0.5%.--Tracerlab, Inc., Waltham 54, Mass.

PRODUCT NEWS: The U.S. was by far the largest purchaser of uranium concentrates from Canada in 1959, taking $278,912,726 worth, official Canadian figures show. The U. K. followed, buying $32,602,987 worth. Other countries to whom uranium was shipped included W. Germany ($129,262 worth); Switzerland ($121,760); Japan $106,831); India ($20,000); Sweden ($8,711); Austria ($1,591); and Denmark ($284).

Two temporary burial sites for disposing of solid, packaged radioactive wastes have been established by the USAEC at Oak Ridge, Tenn., and at Arco, Idaho. Permanent sites are to be set up in the future. Charges for burial are 70¢ per cu. ft., with a minimum charges of $21 for 30 cu. ft. of packaged waste or less. The service is available only to USAEC-licensees.

In what is believed to be the first clinical use of total-body irradiation with cesium-137, the Medical Division of Oak Ridge Institute of Nuclear Studies has treated patients with chronic disorders of the bone marrow and lymphatic tissue. A specially constructed underground room is used in this method which employs eight large sources of cesium-137. One source is placed at each of the eight corners of the small room so that the patient receives uniformly distributed radiation over his entire body. The sources have movable shields which allows varying the dose rate over a wide range.

MANUFACTURERS' NEWS: A beta ray thickness gauge, believed to be the largest unit of this type sold in Europe, is being delivered by Tracerlab, Inc., Waltham, Mass., to the OY Control AB Company, Finland for use on a large paper making machine. Although a number of earlier gauges have been installed by Tracerlab in paper plants in Finland, this is the largest and most elaborate. It is capable of checking, from edge to edge, the uniformity of thickness of a twenty-foot width of paper in process. Tracerlab feels that the sale was the result of high standards of stability and sensitivity it has established for this equipment since competitive devices are available from European suppliers at less than half the price of the Tracerlab unit.

Recent equipment sales by Radiation Dynamics, Inc., Westbury, L.I., include a Dynamitron accelerator, being supplied to the Cambridge Research Center of the U.S. Air Force, and a positive ion Dynamitron accelerator for Grumman Aircraft Engineering Corp. The machine for Cambridge Research Center is a 1 Mev electron unit with both electron and x-ray output. Both use cascaded rectifier systems in which all the rectifiers are driven in parallel from a high frequency oscillator.

A sub-critical reactor and pulsed neutron generator, being supplied by Miles Hivolt Ltd., Sussex, England, to the Royal Naval College, Greenwich, is believed to be the first unit of its type made available commercially in Europe. The equipment will be used there by the department of Nuclear Science and Technology in its post-graduate courses for naval officers.

MANUFACTURERS' LITERATURE: Data sheet 20.70 describes titanium tritide foils and targets of U.S. Radium Corp., Morristown, N.J. .....Bulletin describing its "Hurricane" air sampler which collects aerosols at rates to 125 cpm is available from Gelman Instrument Co., Chelsea, Mich.

ATOMIC ENERGY PATENT & TRADE-MARK DIGEST...

PATENTS ISSUED May 10, 1960 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Sealing irradiated polyethylene. Quintin P. Cole, inventor. No. 2,936,261 assigned to General Electric Co. (2) Non-contacting thickness gauge. Charles B. Zimmer, inventor. No. 2,936,374 assigned to Daystrom, Inc., Murray Hill, N.J. (3) Radioactivity bore hole logging. Alexander S. McKay, inventor. No. 2,936,375 assigned to Texaco, Inc. (4) Radiation projector and shielding means. Fritz Jensen, inventor. No. 2,936,378 assigned to North American Philips, Inc., New York, N.Y.

PATENTS ISSUED May 10, 1960 to GOVERNMENTAL ORGANIZATIONS: (1) Method of centrifuge operation. Karl Cohen, inventor. No. 2,936,110 assigned to USAEC. (2) Arithmetic unit for digital computer. James H. Alexander, Arthur W. Burks, Donald A. Flanders, inventors. No. 2,936,115 assigned to USAEC. (3) Simultaneous differential equation computer. Dana M. Collier, Leighton A. Meeks, inventors. No. 2,936,119 assigned to USAEC. (4) Process of reducing plutonium to tetravalent state. Donald F. Mastick, inventor. No. 2,936,213 assigned to USAEC. (5) Rare-earth metal fission products from liquid bismuth composition. Richard H. Wiswall, inventor. No. 2,936,231 assigned to USAEC. (6) Steam forming neutronic reactor and method of operating it. Samuel Untermyer, inventor. No. 2,936,273 assigned to USAEC. (7) Determination of specific neutronic reactivity. Gerhard Dessauer, inventor. No. 2,936,274 assigned to USAEC. (8) Reactor control system. John H. MacNeil, John Y. Estabrook, inventors. No. 2,936,277 assigned to USAEC. (9) Fission product removal from organic solutions. Raymond H. Moore, inventor. No. 2,936,318 assigned to USAEC. (10) Apparatus and method for arc welding. Robert A. Noland, inventor. No. 2,936,363 assigned to USAEC. (11) Radiation dosimeter. William R. Balkwell, Jr., Gail D. Adams, Jr., inventors. No. 2,936,372 assigned to USAEC. (12) Radiation detector. Herbert N. Wilson, Floyd M. Glass, inventors. No. 2,936,401 assigned to USAEC.

PATENTS ISSUED May 17, 1960 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Laboratory reactor. John W. Flora, inventor. No. 2,937,127 assigned to North American Aviation, Inc. (2) Directional scintillation well loggings apparatus. George V. Copland, inventor. No. 2,937,278 assigned to Welex, Inc. (3) Counting read out system. Stanley K. Chao, Hugh F. Stoddart, inventors. No. 2,937,318 assigned to Baird-Atomic, Inc., Cambridge, Mass.

PATENTS ISSUED May 17, 1960 to GOVERNMENTAL ORGANIZATIONS: (1) Electromagnetic pumps. Dudley A. Watt, inventor. No. 2,936,711 assigned to U. K. Atomic Energy Authority, London, Eng. (2) Mixer-settler apparatus. John A. Dukes, Fred Parish, inventors. No. 2,937,078 assigned to U. K. Atomic Energy Authority. (3) Ionization chambers. Jacky Weill, inventor. No. 2,937,282 assigned to Commissariat a l'Energie Atomique, Paris, France.

TRADE-MARK NEWS: Trade-mark "Radiphos" (SN-89,981) is to be issued Abbott Laboratories, N. Chicago, Ill., for pharmaceutical form of radioactive phosphorous.

ATOMIC ENERGY BUSINESS NEWS...

NEW MANUFACTURING ORGANIZATION IN NUCLEAR FIELD: Rio Tinto Co., Ltd., London, England, has joined with the German metallurgical group Deutsche Gold - und Silber-Scheideanstalt (Degussa) to form Nuklear-Chemie and Metallurgie Gesellschaft m.b.H. (NUKEM). Degussa is the only private manufacturer of nuclear fuel elements in Germany and has had considerable experience in the processing of rare metals and compounds. Mallinckrodt Chemical Works, through its subsidiary Mallinckrodt Nuclear Corp., is also a shareholder in NUKEM. It has set up a technical collaboration agreement with NUKEM providing for exchange of information on the processing of nuclear fuel materials. NUKEM will take over the existing research and production program of the Degussa Nuklear Gruppe. This program covers a wide range of uranium and thorium processing and fabricating activities. NUKEM will manufacture metallic, ceramic and cermet fuel materials; enriched uranium materials; reactor fuel elements; and plant and equipment for production and processing of fuel materials and fuel elements.

NEW TEST FACILITY TO BE FURNISHED: General Electric's atomic power equipment department, San Jose, Calif., will design, build and operate a special nuclear fuel test loop under order received from General Atomic division of General Dynamics Corp. The new test facility will be installed in the test reactor at APED's Vallecitos laboratory, near Pleasanton, Calif. It will be used for extensive irradiation testing of the prototype fuel for the 40,000 ekw high-temperature gas-cooled reactor which General Atomic is designing for the Philadelphia Electric Co. and High Temperature Reactor Development Associates, Inc.

ATOMIC ENERGY FINANCIAL NEWS...

ACQUISITION BY NUCLEAR INSTRUMENT FIRM: Victoreen Instrument Co., Cleveland, manufacturer of nucleonic and electronic apparatus has acquired Electronic Products Co., Mt. Vernon, N.Y., designer and manufacturer of highly sophisticated electronic instrumentation for defense use, for medical applications of radioactivity, etc. The purchase was made for cash and stock of Victoreen totaling approximately $800,000. Victoreen officials have forecast an additional $5 million in annual sales volume through this acquisition.

MERGER OF URANIUM MINING & MILLING COMPANIES: Radorock Resources, Inc., and Federal Uranium Corp. have merged into the newly-formed Federal Resources Corp., Salt Lake City, Utah. Merger terms provide that stockholders of the two companies are to receive one share of the new company for each share of Radorock and Federal Uranium. The new firm, with capital assets totaling $20 million, becomes one of the largest independents in the U.S. uranium mining and milling industry.

SEC DECISION ON NUCLEAR POWER FINANCING: Securities and Exchange Commission has cleared the financing of Saxton Nuclear Experimental Corp., Saxton, La., a non-profit corporation organized to construct, finance and maintain a small experimental nuclear reactor. It proposes to issue and sell 20,000 shares of its $1 par common stock to Pennsylvania Electric Co., Metropolitan Edison Co., New Jersey Power and Light Co., and Jersey Central Power & Light Co., in the respective amounts of 24%, 32%, 11% and 33%. The four companies will make cash payments, from time to time, to Saxton not in excess of $8,500,000 to be used in obtaining, operating and maintaining the experimental reactor.

CANADIAN URANIUM PRODUCER SHOWS GOOD EARNINGS: Earnings of Gunnar Mines for 1959 were $8,951,134 with a net of $2.56 per share compared with net of $11,310,830 for 1958 or $3.25 per share. Lower uranium sales owing to quota restrictions placed on all Canadian uranium producers were reflected in the year's operations, with sales for the period amounting to $20,974,251 as compared with $23,809,839 for 1958.

NEW BOOKS & OTHER PUBLICATIONS...

Training in Radiological Health & Safety: Report of Committee Appointed by the UKAEA. This committee, under chairmanship of Sir Douglas Veale, was set up to consider the need in the United Kingdom for specialists to deal with health and safety aspects of use of ionizing radiations and radioactive substances. Among other suggestions, the committee recommends a national radiological advisory service be set up, with regional centers. (5s.6d).

Atomic Radiation and Polymers. A. Charlesby. Royal Military College of Science, Shrivenham, England.--Pergamon Press, 122 E. 55th St., New York. ($17.50)

Metallurgy of Hafnium. D. E. Thomas, Atomic Power div., Westinghouse Electric, and E. T. Hayes, U.S. Bureau of Mines. Third in the series on the metallurgy of reactor materials published under sponsorship of Naval Reactors Branch, USAEC. ($1.50) (Metallurgy of Zirconium and The Metal Beryllium were first two in this series). .....Uranium. James Paone, Bureau of Mines. Preprint from Mineral Facts and Problems, 1960 edition. (15¢)--Sup't. of Documents, Wash. 25, D.C.

Possible Large-Scale Uses of Separated Fission Products. William H. McVey, USAEC. No. TID-8521. (50¢).....Recovery of Power and Isotopes from Contained Underground Nuclear Explosions. Part III of symposium on commercial uses of nuclear detonations held May 13-15, 1959, San Francisco, Calif. ($2.25)--Office of Technical Services, Wash. 25, D.C.

MEETINGS, COURSES, CONFERENCES...

SYMPOSIUM: Symposium to provide an introduction to thermonuclear plasma physics is scheduled for Aug. 22-26, 1960 at Gatlinburg, Tenn. Oak Ridge National Laboratory and Institute of Nuclear Studies, with the USAEC, is sponsoring the symposium. Details may be obtained from the Institute, P.O. Box 117, Oak Ridge, Tenn.

Sixth Annual Instrumental Methods of Analysis Symposium will be held June 1-3, 1960 at Montreal, Canada, with a session on nuclear instrumentation. Full details may be obtained from N. B. Ward, Laurentian Valve and Fittings, Ltd., 4060 MacKenzie St., Montreal 26, Que.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

May 24, 1960